

Comparative Tests on a Two-row Velocity Stage

SOV/96-58-5-2/27

Investigations were then made on stage Nr 113 with steam supplied over only part of the arc; the gaps were unchanged and no special shields were used. The effect of partial steam-supply on the internal efficiency is shown graphically in Figure 9 and data on the mean total stage reaction are given in Figure 10. It follows from the results that different procedures should be used in selecting the design stage reaction for full and for partial steam supply.

Velocity stages with expanding nozzles are used for operation at high supersonic drops. Two-row stages with expanding nozzles were investigated. One had the same working and guide blades as type nr 113 with contracting nozzles as described above; the other had straighter-bladed guide vanes similar in shape to those of a compressor. The blade geometry is discussed.

The graph of internal efficiency for stage Nr 113 with expanding nozzles and full steam supply is given in Fig 11.

The efficiency is appreciably lower than for a stage with contracting nozzles.

The efficiency and test results of different velocity stages are then compared, noting, however that the procedures are still

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insufficiently developed. Even stages tested in one and the same turbine differ in their geometrical characteristic in a way which affects the efficiency. Various methods are used in this article to compare velocity stages. Internal efficiency curves with full steam supply for all stages are shown in Figure 12: all stages were tested in the same experimental turbine, using the same procedure. The best results were obtained with the Moscow Power Institute stage KS-1A-3 with a mean wheel diameter of 668 mm and a nozzle height of 25 mm. Here, the maximum efficiency is 81% but cannot be compared directly with stage Nr 113 because of the considerable difference in dimensions. However, if the curves of the KGTZ (Khar'kov Turbo-generator Works) are used to recalculate the results for stage Nr 113 to the dimensions of stage KS-1A-3, its efficiency is increased by only 2.5% and becomes 73.8%. The stage efficiencies of different wheels are then discussed; the internal efficiencies of velocity stages KS-1A-2 (with welded diaphragm) and of stage Nr 113 as a function of nozzle area are given in Figure 13. Throughout the range, the efficiency of stage KS-1A-2 is higher.

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It is concluded that stage Nr 113 is of satisfactory efficiency under sub-critical conditions but beyond this it drops markedly and is still worse with expanding nozzles. However, the Moscow Power Institute stage KS-1A with a nozzle height of 25 mm and a diameter of 668 mm had the very high maximum internal efficiency of 81%, which confirmed the high efficiency of this combination at a low degree of reaction. Stage KS-1A was better than stage Nr 113 in efficiency and stability, particularly with partial steam supply. It should be borne in mind that stage Nr 113 is more carefully manufactured and has assembled milled nozzles, whereas stage KS-1A was tested with a welded diaphragm. There are 13 figures, 1 table and 1 Soviet reference.

ASSOCIATION: MEI

Card 5/5

1. Turbine wheels--Design
2. Turbine wheels--Test results
3. Turbine wheels--Effectiveness

DEYCH, M.Ye., prof. doktor tekhn. nauk; SAMOYLOVICH, G.S., dots. kand. tekhn.
nauk; KAZINTSEV, P.V., inzh.

Setup for automatizing the static tests of turbine cascades. *Energomashi-*
nostroenie 4 no.9:4-8 S '58. (MIRA 11:11)

(Turbines—Aerodynamics)

007/96-59-4-7/21

AUTHORS: Deych, M.Ye., Doctor of Technical Sciences,
Trojanovskiy, B.M., Candidate of Technical Sciences;
~~Kazintsev, F.V.~~ Engineer and
Abramov, V.I., Engineer

TITLE: An Investigation of a Series of Single-row Stages
(Issledovaniye serii odnovetchnykh stapey)

PERIODICAL: Teploenergetika, 1959, Nr 4, pp 38-43 (USSR)

ABSTRACT: A number of types of nozzle and working blading for turbines have been developed in the Moscow Power Institute. These can be combined in various ways in single- and two-row stages. Tests results on a number of two-row velocity stages have already been published in Teploenergetika, 1958, Nr 5. Six combinations of single-row stages were made up of blading intended for operation at subsonic and sonic velocities. The stage combinations consisted of two nozzle and three working blades. All the stages were 534 mm diameter, 25 mm nozzle blade height and 28 mm working blade height and were all of the same width. A stage diagram is given in Fig.1. The experimental steam turbine and the procedure used were the same as described in Teploenergetika, 1957, Nr 5. Particulars of the stages

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tests are tabulated. The stages were first tested with full steam supply. Experimental internal efficiency data for stage KD-2-2A are given in Fig.2. Where high supersonic speeds are used the blading losses increase and the stage efficiency is reduced. Fig.3 gives losses in nozzle blading TS-2A and the internal efficiency of stage KD-2-2A. Mean reaction curves for stage KD-2-2A are given in Fig.4. Internal efficiency curves for all six combinations investigated are given in Fig.5 and the results are discussed. Stage KD-2-2A was then tested with partial steam supply. Curves of the relative internal efficiency of the stage are given in Fig.6. Internal efficiency curves for the stage with different angles of steam delivery are given in Fig.7. It will be seen that the stage efficiency is much reduced with partial steam supply. This and other test results are discussed and are stated to be fully in accordance with theoretical expectations. The influence of nozzle diaphragm widths on stage efficiency of KD-2-1A was then investigated and

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the results are given in Fig.8. It is clearly shown that the stage efficiency falls off with a wide diaphragm and this is because the tests were made outside the zone of best width. The efficiencies of single- and two-row stages are then compared. The test results for two such stages are given in Fig.10 and show the conditions under which one or other of the two regulating stages should be selected. The number of unregulated stages and other constructional features of a machine vary considerably depending on the type of regulating stage used. A detailed analysis of this problem falls outside the scope of the present article. It is concluded that the single-row stages investigated are of high efficiency, particularly the stages KD-2-2A and KD-1-2A. If the gaps are right and the blading is correctly chosen a small negative reaction has little influence on the efficiency of a single row stage with short blades. On the basis of the tests it is considered that for the high and medium pressure cylinders of turbines the best two combinations are KD-2-2A and KD-1-2A composed of blade profiles TS-2A, TR-2A, TS-1A and TR-2A. Investigations on stage KD-2-2A with partial

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steam supply and various numbers of nozzles showed that the important effect of additional losses and secondary effects associated with partial steam supplies. Comparison of single- and two-row stages made of the new improved blade profiles shows that the difference between the possible highest efficiency of these stages has been reduced and the field of application of a velocity stage has been extended. There are 10 figures, 1 table and 2 Soviet references.

ASSOCIATION: Moskovskiy Energeticheskiy Institut (Moscow Power Institute)

Card 4/4

DEYCH, M.Ye., doktor tekhn.nauk, prof.; KAZINTSEV, F.V., inzh.; GOLOVIN,
V.A., inzh.

Automatic computing device for solution of energy-loss equations used
in the study of turbine bladings. Energomashinoostroenie 5 no.3:31-34
Mr!59. (MIRA 12:3)

(Turbines)

SOV/96-59-6-2/22
AUTHORS: Deych, M.Ye., (Dr. Tech.Sci.), Kazintsev, F.V.,
Abramov, V.I., Kiselev, L.Ye. and Filippova, V.G.
(Engineers)
TITLE: An Investigation of Turbine Stages with Long Blades of
Constant Profile under Variable Conditions (Issledovaniye
peremennogo rezhima turbinnykh stupeni s dlinnymi
lopatkami postoyannogo profilya)
PERIODICAL: Teploenergetika, 1959, Nr 6, pp 8-17 (USSR)
ABSTRACT: This article describes the results of tests on four
single-row stages with relatively long blades of constant
profile, fitted to an experimental turbine. The
efficiency of single-row stages depends on a number of
geometrical and operating conditions: the configuration,
pitch and angles of installation of the blades, the ratio
of the flow areas, the velocity ratio and the Mach and
Reynolds numbers. The tests described here were made to
study the influence of these factors on the efficiency.
The stages had a d/l ratio + 7.73 which is the limiting
value for cylindrical blading. The four stages investi-
gated employed two types of guide vanes (TS-1A and TS-2A)
and two types of working blades (TR-2A and TR-3A).
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An Investigation of Turbine Stages with Long Blades of Constant Profile under Variable Conditions

The principal geometrical characteristics of the blading are given in Table 1. All the stages used welded diaphragms of 400 mm mean diameter with guide vanes 48 mm high and working blades 51.7 mm high. The measuring equipment used is briefly described. The stages were tested with ratios of back pressure to inlet pressure of 0.9 to 0.54, which corresponds to a Mach number range of 0.4 to 1.0. The tests were made with constant back pressure. The influence of diaphragm leakage on the efficiency and the degree of reaction at root and tip sections were investigated. The quantity of leakage steam ranged from 0.8 to 3.5% of the flow through the guide vanes. The influence of the Reynolds number on the stage characteristics was investigated in three of the stages, with Reynolds numbers ranging from 3×10^5 to 7×10^5 . The maximum error in determining the stage efficiency was between 0.4 and 0.6%. The influence of compressibility on the stage efficiency and degree of reaction is then considered. Stage efficiency graphs as functions of velocity and pressure ratios are given in

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Fig 1: it will be seen that for each stage there is a pressure ratio that gives maximum efficiency. Values of the best pressure ratio, the highest efficiency, and the change in efficiency as the pressure ratio deviates from the optimum value, are tabulated in Table 2. The curves in Fig 1 show that the efficiency is fairly stable as the velocity ratio changes, indicating that stages with guide vanes type TS-2A have a flatter characteristic as a function of the velocity ratio. This is because the ratio of the blade area to the guide-vane area is lower and there is consequently more reaction in stages with these guide vanes. Curves of stage efficiency as a function of M_0 with constant velocity ratio are given in Fig 2a, and curves of efficiency as function of the available heat drop with the speed constant in Fig 2b. From consideration of these curves it is concluded that the stage efficiency is reasonably stable. Curves of the pressure distribution over the pitch of the guide vanes at the tip and root sections respectively are given in Figs 3a and 3b. Corresponding curves under static

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conditions and in the presence of a working wheel are given in Fig 3c. It will be seen that the static pressure field is very irregular. Graphs of the reaction at root and tip sections as a function of the velocity ratio are given in Fig 4. It will be seen that in most cases the reaction is negative at the blade roots. These tests were made in the absence of diaphragm leakage. The presence of negative reaction at the blade roots has no appreciable influence on the stage efficiency. The curves of distribution of reaction over the radius for stages KD-2-2A and KD-2-3A at various values of velocity ratio and constant pressure ratio are given in Fig 5. The curves were constructed from experimental values of the loss factors at different sections of the guide vanes and reaction in the root section, using formula (2). It will be seen that the agreement between the experimental and calculated values of reaction is satisfactory. Graphs of the relative difference of root and tip reaction as a function of the relative change in the velocity ratio are given in Fig 6. Over the range

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of change of velocity ratio from -0.2 to $+0.2$ this relationship is given by formula (3). It was found that there is a certain range of Reynolds and Mach numbers and of diaphragm leakage for which formula (3) remains valid, as will be seen from the results plotted in Fig 6. Formula (3) can serve as a basis for two methods of designing stages with long blades operating under variable conditions, as is briefly explained. The influence of Reynolds number on the stage efficiency is then considered. A series of tests was made on the three stages. The influence of the Reynolds number was thereby evaluated in stages having different degrees of reaction at the root and middle sections. The test results, plotted in Fig 7, are discussed at some length. It is found that the influence of the Reynolds number is greatest when the velocity ratio is high. Graphs of the relationship between the maximum stage efficiency and the Reynolds number appear in Fig 8, and graphs showing the influence of the Reynolds number on the reaction at the root and tip sections of the three stages are plotted in

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Fig 9. Graphs of the flow coefficients as a function of Reynolds number are plotted in Fig 10. The influence of diaphragm and leakage is then considered. In order to determine the influence of diaphragm leakage on the stage characteristics, steam was delivered from the steam chest to the space between the disc and diaphragm in amounts up to 5% of the main flow. Graphs of the changes in efficiency as functions of leakage are plotted in Fig 11. Graphs of tip and root reaction, and flow coefficient as function of velocity ratio and a graph of the influence of leakage on the change in stage reaction, are plotted in Figs 12a and 12b respectively. It is found that increase in Reynolds number and decrease in leakage reduces both root and tip reaction. The results of a detailed study of the flow structure in stage KD-2-2A are discussed. The main conclusions are that the ratio of the flow area of the working blades to that of the guide vanes has a considerable influence on stage efficiency. Alterations of the blade root reaction from + 5% to zero had little influence on the stage efficiency. The presence of low negative reaction

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caused some reduction in stage efficiency. With increase in the compressibility (Mach number) the efficiency first rises and then falls. The optimum value of the Mach number depends on the stage geometry and particularly on the area ratio and the type of blades used. As the Mach number increases, so does the reaction. Detailed investigation of the flow structure showed that alteration of the area ratio alters the losses in the working blades and the discharge velocity loss. The flow was found to be very uneven at the outlet section of the guide vanes. It was established that over a certain range of Mach numbers, rotation of the runner has no important influence on the velocity distribution over the pitch of the guide vanes. It follows from this that stage calculations based on static steam tests on full-scale diaphragms are

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reliable provided that the Mach and Reynolds numbers are equal in the actual and model conditions.

There are 12 figures, 2 tables and 5 Soviet references.

ASSOCIATION: Moskovskiy energeticheskiy institut
(Moscow Power Institute)

Card 8/8

DEYCH, M.Ye., doktor tekhn.nauk; TROYANOVSKIY, B.M., kand.tekhn.nauk
KAZIMTSEV, F.V., inzh.; ABRAMOV, V.I., inzh.

Investigating a series of single-row stages. Teploenergetika 6 no.4:
38-43 Ap '59. (MIRA 12:3)

1. Moskovskiy energeticheskiy institut.
(Steam turbines)

GUBAREV, A.V.; KAZINTSEV, F.V.; TROYANOVSKIY, B.M.

"Aerodynamic experiment in machinery construction" by I.L.Povkh.
Reviewed by A.V. Gubarev, F.V. Kazintsev, B.M. Troianovskii.
Energomashinostroenie 6 no.8:44 Apr '60. (MIRA 14:9)
(Machinery--Aerodynamics)
(Povkh, I.L.)

DEYCH, M.Ye., doktor tekhn. nauk, prof.; TROYANOVSKIY, B.M., kand. tekhn. nauk, dotsent; ABRAMOV, V.I., inzh.; KAZINTSEV, F.V., inzh.; KISELEV, L.Ye., inzh.

Studying the partial admission in two-row speed stages.
Energomashinostroenie 7 no.3:24-27 Mr '61. (MIRA 16:8)
(Steam turbines—Testing)

TROYANOVSKIY, B.M., kand.tekhn.nauk, dotsent; KAZINTSEV, F.V., inzh.;
KISELEV, L.Ye., inzh.; KRUPENNIKOV, B.N., inzh.

Studying the last stages of condensation steam turbines.
Energomashinostroenie 8 no.3:26-29 Mr '62. (MIRA 15:2)
(Steam turbines--Testing)

DEYCH, M.Ye.; TROYANOVSKIY, B.M.; Primal uchastiya KAZINTSEV,
F.V., inzh.; ZAL'F, G.A., doktor tekhn. nauk, retsenzent;
PALEYEV, N.M., inzh., red.

[Investigations and calculations of the stages of axial-flow
turbines] Issledovaniia i raschety stupeni oseykh turbin.
Moskva, Izd-vo "Mashinostroenie," 1964. 627 p.
(MIRA 17:5)

TROYANOVSKIY, B.M., kand. tekhn. nauk, dotsent; VAZINTSEV, F.V., inzh.;
ZANIN, A.I., inzh.

Increase of stage efficiency resulting from the replacement of
stamped nozzle blades with milled ones. Energomashinostroenie
10 no.6:39-40 Je '64. (MIRA 17:9)

ACCESSION NR: AP4041639

S/0114/64/000/006/0039/0040

AUTHOR: Troyanovskiy, B. M. (Candidate of technical sciences, Docent);
Zanin, A. I.; Kazintsev, F. V. (Engineer)

TITLE: Higher economy of a stage in which stamped blades were replaced with
milled blades

SOURCE: Energomashinostroyeniye, no. 6, 1964, 39-40

TOPIC TAGS: steam turbine, steam turbine blade, stamped turbine blade,
milled turbine blade, steam turbine economy

ABSTRACT: The last stage of a VPT-25-4 (Ural Turbomotor Plant) steam
turbine was tested under various conditions with (a) stamped nozzle blades and
(b) MEI-designed milled varying-thickness blades having the same effective
 $\sin \alpha$, = 0.266. The stage efficiency was 80-81% and 86% for the first and second
diaphragms, respectively. The tests were staged with pressure ratios

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ACCESSION NR: AP4041639

corresponding to subsonic speeds in the diaphragms, and with natural Reynolds
numbers $[Re = b, c, / \sqrt{\nu}] = (1.3-2.0) \times 10^5]$. Orig. art. has: 2 figures.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power-Engineering
Institute)

SUBMITTED: 00

ENCL: 00

SUB CODE: PR

NO REF SOV: 002

OTHER: 000

Card 2/2

GOLOVIN, V.A., inzh., dissertant; ZANIN, A.I., inzh.; KAZINTSEV, F.V.,
inzh., dissertant

Methods for studying models of the terminal stages of steam
turbines operating on wet steam. Teploenergetika 12 no.3:71-
75 Mr '65. (MIRA 18:6)

1. Moskovskiy energeticheskiy institut.

TKACHEV, V.N., kand.tekhn.nauk; KAZINTSEV, N.V., inzh.

High-frequency hard facing with sormite of self-dressing
plowshares. Svar.proizv. no.1:14-16 Ja '63. (MIRA 16:2)

1. Nauchno-issledovatel'skiy institut tekhnologii mashino-
stroyeniya Rostovskogo soveta narodnogo khozyaystva.
(Hard facing) (Plows)

U 34526-65 EPA(s)-2/ENT(m)/EMP(v)/T/EMP(t)/EMP(k)/EMP(b)/EWA(c) Pf-4 LJP(c)
JD/HM/JG

ASSOCIATION NR: APS007362

010286 001 000 004 0033/0033

Author: Kabanov, V. N.; Kazantsev, N. V.; Smeyt, M. A.; Shchegolev, G. M.

metal for surfacing. Class 12, No. 120001.

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 4, 1965, 23

TOPIC TAGS: metal surfacing, welding 4

ABSTRACT: This Author's Certificate introduces a metal for surfacing which contains chromium, manganese and silicon. To improve the hardness and durability of the surfacing, the metal contains (in %): carbon 0.2-0.3; manganese 0.5-0.8; silicon 1.8-2.2; chromium 22-26; boron 0.4-0.6; titanium 0.25-0.35; tungsten 2-10; sulfur less than 0.008; phosphorus less than 0.05; the remainder iron. The Author's Certificate also covers a variation of this metal in which the tungsten is introduced directly during melting in order to improve the mechanical properties of the metal.

ASSOCIATION: Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya (Rostov-on-Don Scientific Research Institute of Machine-Building Technology)

Card 1/2

S/169/62/000/008/007/090
E202/E192

AUTHORS: Kissin, I.G., and Kazintsev, Ye.A.

TITLE: Temperature conditions in the oil- and gas-bearing regions of the Central and Eastern Cis-Caucasia

PERIODICAL: Referativnyy zhurnal, Geofizika, no.8, 1962, 12, abstract 8 A 60. (Geol. nefti i gaza, 2, 1962, 42-45)

TEXT: The oil and gas deposits of the Cis-Caucasia are characterised by quick increase of temperature with depth. On the basis of special measurements of high accuracy in a series of holes, and with the help of other temperature observations carried out in 70 holes, a series of geothermal charts was prepared for the Central and Eastern Cis-Caucasia. The analysis of materials leads to the conclusion that the distribution of temperatures in depths is determined by numerous factors, the most important being the geological structure, various thermal resistances of the rocks, and the effect of subterranean waters. ✓

[Abstractor's note: Complete translation.]

Card 1/1

KISIN, I.G.; KAZINTSEV, Ye.A.; PANTELEYEV, I.Ya., otv. red.

[Eastern Ciscaucasian artesian basin] Vostochno-
Predkavkazskii artozianskii bassein. Moskva, Nauka,
1964. 238 p. (MIRA 17:9)

KISSIN, I.G.; KAZINTSEV, Ye.A.

Temperature conditions of the oil and gas-bearing regions of
central and eastern Ciscaucasia. Geol. nefti i gaza 6
no.2:42-45 F '62. (MIRA 15:2)

(Caucasus, Northern—Petroleum geology)

(Caucasus, Northern—Gas, Natural-geology)

(Earth temperature)

KAZINTSEV, Ye.A.

Hydrogeological characteristics of the eastern Ciscaucasian
Maikop series. Trudy Lab.gidrobeol.probl. 48:97-113 '62.

(MIRA 15:8)

(Caucasus, Northern--Water, Underground--Composition)

AP500951L

S/0048/65/029/003/0409/0411

L.A. Shurikova, Ya.I. Dobrzhenko, G.F. Magaril, I.G.

Experimental data on the luminescent properties of europium activated sodium
chloride phosphors /Report, 12th Conference on Luminescence
1964, 1965, 30 Jan-5 Feb 1965/

SOURCE: AN SSSR, Izvestiya. Seriya fizicheskaya, v. 28, no. 3, 1965, 409-411

TOPIC TAGS: fluorescence, fluorescent crystal, sodium chloride, potassium
compound, europium, x ray irradiation, F center

ABSTRACT: NaCl:Eu and KCl:Eu crystals were grown from melts containing from 0.1 to
3 mole percent europium and their luminescence properties were investigated.
Excitation spectra, emission spectra, and glow curves were recorded and the
effects of various heat treatments and irradiation with 50 kV x-rays and
gamma-rays were investigated. It is concluded that the luminescence of
these crystals is due to the excitation of the F center. The mechanism of
luminescence is not yet fully understood. Among these interesting results
the excitation bands of NaCl:Eu at 245 and 400 mμ are reported.

ASSOCIATION NR. AP5009514

single type of luminescence center, in agreement with the views of Ya.Ya. Kirs
 (Tr. In-ta fiz. i astron. AN Est SSR N. 4, 3 (1962)) but a
 multiple of centers. The effect of this type of center, which is
 this effect was fully reversible in KCl:Eu, the luminescence being restored by a
 but only partly reversible in NaCl:Eu. Irradiation with x-rays also
 and 1 table.

ASSOCIATION: Irkutskiy gosudarstvennyy universitet (Irkutsk State University)

MODEL: 00

ENCL: 00

SUB CODE: 09, 88

OTHER: 00

Date 2/2

L 11108-66 (N) EWT(m)/EWP(e)/EWP(v)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) ID/HM/H
ACC NR: AP6002531 SOURCE CODE: UR/0286/65/000/023/0036/0036

INVENTOR: Petrov, S. A.; Kaufman, M. S.; Kialyuk, F. I.; Zhuravlev, V. L.;
Krichevskiy, Z. A.; Aldyrev, D. A.; Kazintsev, N. V.; Tkachev, V. N. 27
B

ORG: none

TITLE: Method of strengthening thin-sheet parts. Class 21, No. 176646. [an-
nounced by the All-Union Scientific Research and Design Technological Institute
of Coal Machine Building (Vsesoyuznyy nauchno-issledovatel'skiy i proyektno-tekhn-
logicheskiy institut ugol'nogo mashinostroyeniya); Rostov Scientific Research
Technological Machine Building Institute (Rostovskiy nauchno-issledovatel'skiy
institut tekhnologii mashinostroyeniya)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 23, 1965, 36

TOPIC TAGS: thin sheet part, part strengthening, part surfacing, thin sheet
surfacing, wear resistant powder

ABSTRACT: This Author Certificate introduces a method of strengthening thin-
sheet parts by surfacing with wear-resistant powder deposited with high-frequency
current. To maintain a constant gap between the inductor and the surfaced part,
ensure a small depth of penetration in the base metal, and to avoid burning
through, the inductor is located below the surfaced part. [ND]

SUB CODE: 11/ SUBM DATE: 24Nov62/ ATD PRESS: 4/76
Card 1/1 H(w) UDC: 621.791.927-415

KAZI ONOVA, A. P.

One property of two-fold homologous tetrahedrons. Izv. vys.
ucheb. zav.; mat. no.2:108-109 '60. (MIRA 13:7)

1. Kirovskiy pedagogicheskiy institut im. V.I. Lenina.
(Tetrahedra)

KAZIOR, Adam; RAJKOWSKI, Zdzislaw.

New azulene drug. Polski tygod.lek. 10 no.29:971-972 18 July '55.

1. Z Sanatorium Klinicznego Borkowo w Polczynie-Zdroju; dyrektor Sanatorium: dr med. A. Kazior i z Zakladu Farmakognozi A.M. w Warszawie; kierownik: prof.dr Jakub Deryng. Zaklad Farmakognozi A.M. w Warszawie.

(PLANTS,
chamomile, prod. of azulene.)

KAZIOR, Adam

Frontal gynecological lamp. Polski tygod. lek. 11 no.7:
322-323 13 Feb 56.

1. Z Snat. Uzdrawiskowego, Borkowo w Polczynie Zdroju;
dyrektor dr. med. Adam Kazior Polczyn-Zdroj. Sanat. Borkowo.
(GYNECOLOGY AND OBSTETRICS, apparatus and instruments,
head lamp for vaginal exam. (Pol))

KAZIOR, Adam

A modified appliance for the study of patency and hydrotubation of the oviducts. Polski tygod. lek. 14 no.33:1544-1546 17 Aug 59.

1. (Z Sanatorium Borkowo w Polczynie Zdroju; dyrektor: dr med Adam Kazior.
(OVIDUCTS)

KAZIOR, Adam

Value of resochin therapy of primary chronic rheumatism. Polski tygod.
lek. 14 no.31:1456-1458 3 Aug 59.

1. (Z Sanatorium Uzdrowiskowego Borkowou; dyrektor: dr med. Adam Kazior.)
(ARTHRITIS RHEUMATOID, ther.) (QUINOLINES, ther.)

POL/39-25-11-12/26

18(5)

AUTHOR: Jońca, J., Kazior, Z., and Rąbalski, J., Mechanical Engineers

TITLE: Pressure of the Metal on the Rolls and Its Measurement
(Nacisk metalu na walce i jego pomiar)

PERIODICAL: Hutnik, 1958, Vol 25, Nr 11-12, pp 492-497 (Poland)

ABSTRACT: The constant measurement of the pressure of the metal on the rolls allows rolling mills to operate under optimum conditions, to utilize the rolling equipment more fully and to quickly discover troubles when they appear. The pressure-measuring device must meet the following requirements: stability of the zero point, insensitiveness to temperature and other outside influences, speed of indication, reliability without supervision, simple construction, easy installation, low cost, transmission of measurements. These requirements are met by two electric measuring methods: the induction method and the resistance (tensiometric) method of pressure measurement. The article describes

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Pressure of the Metal on the Rolls and Its Measurement

POL/39-25-11-12/26

the indicators designed and built according to these methods by the Institute of Iron Metallurgy. The resistance (tensiometric) indicators are designed for nominal loads from 30 to 1500 tons and have a rectilinear characteristic; they ensure measurements with an accuracy of 1 to 2%. The induction indicators have a 5% accuracy and, practically, a rectilinear characteristic. Tensiometric indicators should be employed where a high accuracy is required, for instance in cold mills. Induction indicators are suited for hot mills. There are 4 photographs, 8 diagrams, 2 circuit diagrams, 1 table and 9 references, 5 of which are Polish, 1 English and 3 German.

ASSOCIATION: Instytut metalurgii zelaza - Gliwice (Institute of Iron Metallurgy, Gliwice)

Card 2/2

GAWIN, C., mgr inz.; KAZIOR, Z., inz.

Modeling device for reproduction of the cooling course of large forgings. Biul inf inst metal zel no.2/118-20 '63.

1. Institute of Iron Metallurgy, Gliwice.

"APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000721410008-8

APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000721410008-8"

KAZISZY, I.

The influence of coking conditions on the quality of coke. p. 159

KAKS, SMOLA, WAZ. Katowice, Poland Vol. 4, no. 4, July/Aug. 1959.

Monthly List of East European Accession. (EAI) LC, Vol. 9, no. 1, Jan. 1960.

Uncl.

NADZIAKIEWICZ, Julian; KAZISZYN, Irena

Addition of coke breeze to coal mixtures of Polish origin. Koks 6
no.3:88-95 My-Je '61.

1. Instytut Chemicznej Przerobki Węgla.

(Coke)

KRAUSE, Witold; KAZISZYN, Irena; GRZYBOWSKI, Stefan

Experiments in progressive coal crushing made on an industrial scale.
Pt.1. Koks 8 no.1:7-12 Ja-F '63.

1. Instytut Chemicznej Przerobki Węgla, Zabrze (for Krause and Kaziszyn).
2. Huta im. Lenina, Nowa Huta - Krakow (for Grzybowski).

KOZLOWSKI, Czeslaw; NOWAK, Zygfryd; KAZISZYN, Irena; NADZIAKIEWICZ, Julian

Possibility and suitability of separating anthracite coal from coking charge coal from the Victoria mine. Koks 7 no.4:133-139 JI-Ag '62.

1. Główny Instytut Górnictwa, Krakow (for Kozlowski and Nowak)
2. Instytut Chemicznej Przerobki Węgla, Zabrze (for Kaziszyn and Nadziakiewicz).

18(5)

POL/39-25-11-12/26

AUTHOR:

Jońca, J., Kazior, Z., and Rąbalski, J., Mechanical Engineers

TITLE:

Pressure of the Metal on the Rolls and Its Measurement
(Nacisk metalu na walce i jego pomiar)

PERIODICAL:

Hutnik, 1958, Vol 25, Nr 11-12, pp 492-497 (Poland)

ABSTRACT:

The constant measurement of the pressure of the metal on the rolls allows rolling mills to operate under optimum conditions, to utilize the rolling equipment more fully and to quickly discover troubles when they appear. The pressure-measuring device must meet the following requirements: stability of the zero point, insensitiveness to temperature and other outside influences, speed of indication, reliability without supervision, simple construction, easy installation, low cost, transmission of measurements. These requirements are met by two electric measuring methods: the induction method and the resistance (tensiometric) method of pressure measurement. The article describes

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Pressure of the Metal on the Rolls and Its Measurement

the indicators designed and built according to these methods by the Institute of Iron Metallurgy. The resistance (tensiometric) indicators are designed for nominal loads from 30 to 1500 tons and have a rectilinear characteristic; they ensure measurements with an accuracy of 1 to 2%. The induction indicators have a 5% accuracy and, practically, a rectilinear characteristic. Tensiometric indicators should be employed where a high accuracy is required, for instance in cold mills. Induction indicators are suited for hot mills. There are 4 photographs, 8 diagrams, 2 circuit diagrams, 1 table and 9 references, 5 of which are Polish, 1 English and 3 German.

ASSOCIATION: Instytut metalurgii zelaza - Gliwice (Institute of Iron Metallurgy, Gliwice)

Card 2/2

LUK'YANETS, Ye.A.; SHUSHERINA, N.P.; TRESHCHOVA, Ye.G.; KAZITSINA, L.A.;
LEVINA, R.Ya.

δ -Lactones and δ -lactams. Part 47: Spectroscopic study of
 δ -enollactones with a semicyclic and endocyclic double bond.
Zhur. org. khim. 1 no.7:1194-1199 J1 '65.

(MIRA 18:11)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.

KAZITSYNA, L.A.; MISHCHENKO, V.V.

Electron absorption spectra of imines of o-hydroxycarbonyl
compounds. Zhur. org. khim. 1 no.4:617-624 Ap '65.
(MIRA 13:11)

KAZITSYNA, L. A.; KIKOT', B. S.; RASSADIN, B. V.; REUTOV, O. A.

Ultraviolet spectra of methoxyphenyldiazonium chlorides.

Zhur. ob. khim. 32 no.12:3977-3982 D '62.

(MIRA 16:1)

(Diazonium compounds—Spectra)

KAZITSYNA, L. A.; KIKOT', B. S.; RASSADIN, B. V.; REUTOV', O. A.

Ultraviolet absorption spectra of hydroxyphenyldiazonium
chlorides. Zhur. ob. khim. 33 no.1:223-227 '63.

(MIRA 16:1)

(Diazonium compounds—Spectra)

KAZITSYNA, L.A.; KUPLETSKAYA, N.B.; PTITSYNA, V.A.; REUTOV, O.A.

Double diazonium salts of monovalent copper. Izv.AN SSSR.Otd.
khim.nauk no.3:562-563 Mr '63. (MIRA 16:4)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Diazonium compounds) (Copper-salts)

KAZITSYNA, L.A.; PASYNKEVICH, S.V.; KUZNETSOVA, A.V.; REUTOV, O.A.

Synthesis, ~~structure~~, and infrared spectra of aryl diazonium cadmium halides. Izv. AN SSSR.Otd.khim.nauk no.10:1762-1767 0 '62. (MIRA 15:10)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Diazonium compounds—Spectra)

CA KAZITSYN, Yu. V.

8

New mineral, "magnaluminoside." N. A. Bobkov and Yu. V. Kazitsyn. *Zapiski Vsesoyuz. Mineral. Obshchestva* (Mem. Russ. minéral.) 80, 108-21 (1951).—The new mineral was found in rough crystals up to 15 cm. in diam. in the region of the Gon River, a tributary to the Tinton River in Archaian metamorphic rocks of the Aldan plateau, in a vein of metasomatic origin, cutting through a contact of marble with a diopside-ophlogopite-calcite rock. Ds. 7.0, hardness 7.5 to 8, color black, in powder grayish-green, luster glassy. Optically isotropic, $n = 1.745 \pm 0.001$. Morphologic forms $\{111\} \{110\} \{113\}$, with a striation parallel to the octahedral edges. X-ray measurements gave $a_0 = 8.188 \pm 0.002$ Å; the powder diagram lines are tabulated; the analogy with spinel in structure is evident. The chem. analysis gave Al_2O_3 68.51, Fe_2O_3 11.37, MgO 15.55%, and minor constituents, among which Na_2O (1.34%) is interesting. The formula is written $(Mg,Fe)(Al,Fe)_2O_4$, i.e. lying in the field of solid solns. of the binary system $MgO-Al_2O_3$. Such mixed phases have previously not been ob-

served in nature, but they are known from synthetic expts. The discussion of the structure shows that in the elementary cell $32 O^{2-}$ correspond to 5 Mg^{2+} and 18 Al^{3+} , while in the normal "ideal" spinel the cations are 8 Mg^{2+} and 16 Al^{3+} . The d. calcd. from the formula given above agrees very well with that detd. from the natural mineral. From real spinels, the new mineral is distinctly different in showing superstructure lines, which can be indexed by doubling the elementary cell parameters. The symmetry of the crystal is hereby somewhat reduced, namely by the replacement of 2 Al^{3+} by 3 Mg^{2+} . Precision rotation diagrams with $[111]$ as rotation axis det. the real identity period to be $a_0/3 = 11.18$ Å, the translation group is therefore a simple cubic, not a cube-centered, cell, and the space group T_1 , while ideal spinel has the space group O_h^2 . For selected network planes, the intensity discussion and calcn. are given in details; it is in entire agreement with T_1 , not with O_h^2 . According to Grigoriev's chem. classification and nomenclature, the new spinel mineral is called "magnaluminoside."

W. Fritel

1951

KAZITSYN, Yu.V.

BOBKOV, N.A.; KAZITSYN, Yu.V.

Spinel of southern Yakutia. Zap.Vses.min.ob-va 83 no.2:163-167 '54.

(MLRA 7:7)

(Yakutia--Spinel group) (Spinel group--Yakutia)

KAZITSYN, Yu. V.; PETRUN', V. F.; HUNDEVIST, D. V.

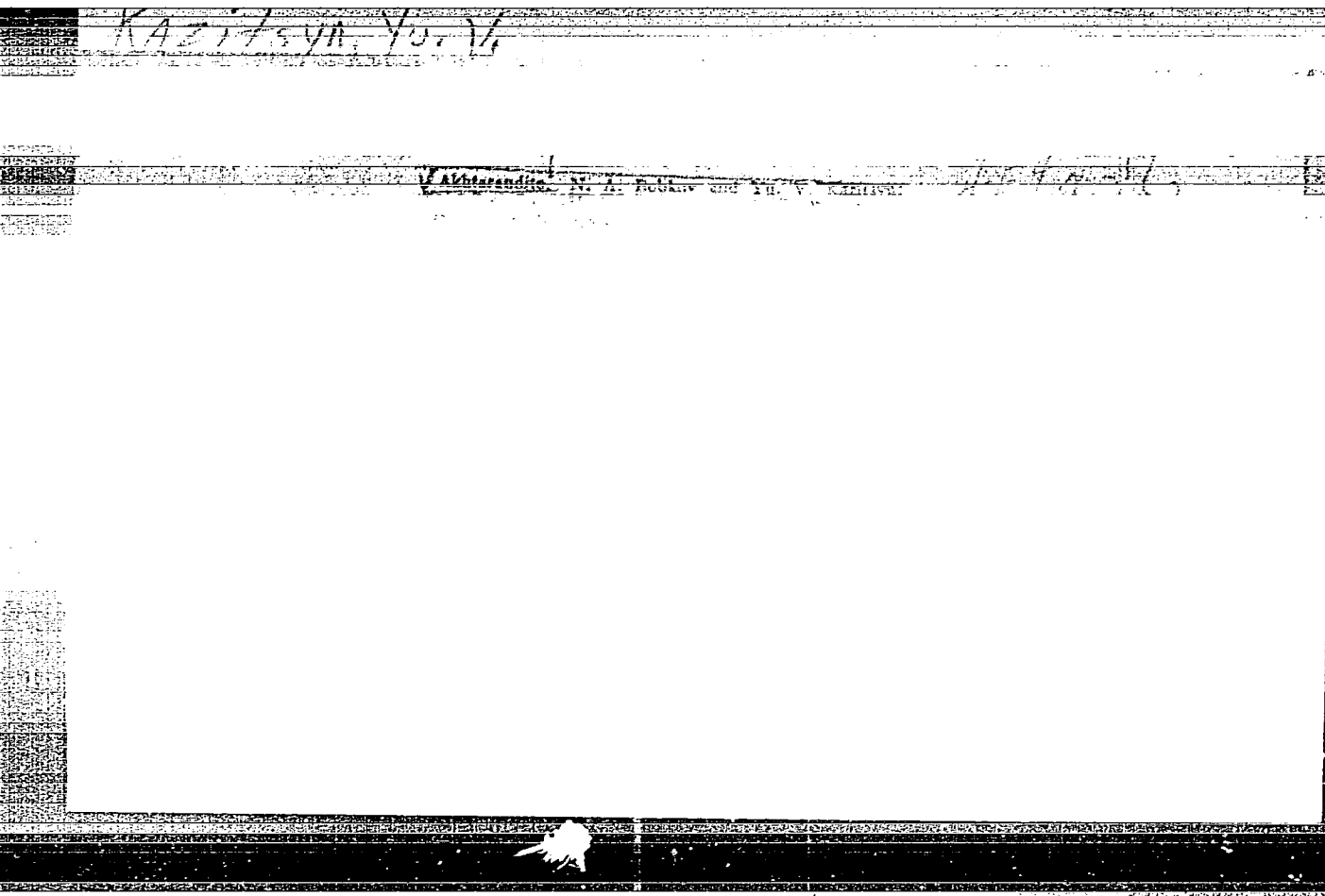
Joint scientific meeting of the Fedorov Institute and the All-
Union Mineralogical Society. Zap. Vses. min. ob-va 83 no. 4: 424-
427 '54. (MLRA 8:2)
(Mineralogy)

KAZITSYN, Yu.V.

A new mineral, bobkowite (an aluminum-alkali opal).
Kristallografiia (LGI) no.4:116-125 '55.

(MLRA 10:5)

(Mineralogy) (Alkali metal silicates)



MOKISEVSKIY, V.A.; KAZITSYN, Yu.V.

Joint scientific meeting of the Federev Institute and the All-Union
Mineralogical Society. Zap.Vses.min.ob-va 84 no.4:506-512 '55.
(Mineralogy) (MIRA 9:2)

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 7,
p 92 (USSR) 15-57-7-9375

AUTHOR: Kazitsyn, Yu. V.

TITLE: Different Morphological Types of Pyrite (O razlichnykh morfologicheskikh tipakh pirita)

PERIODICAL: V sb: Kristallografiya, Nr 5, Moscow, Metallurgizdat, 1956, pp 159-166

ABSTRACT: A segregation of pyrite crystals of cubic, pentagonal-dodecahedral, and octahedral habits has been found in a region of ancient metamorphic rocks. The cubic crystals are distinguished by lustrous surfaces and the absence of striations of the faces. Of the simple forms, in addition to the cube, incipient octahedral faces are sometimes encountered, truncating the tops of the cubes. The parameter of the unit cell for the pyrite cube is $a_0 = 5.406 \text{ kX}$. It has been

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15-57-7-9375

Different Morphological Types of Pyrite (Cont.)

discovered that this variety of pyrite crystallizes in a reducing environment and possibly under conditions of a slight excess of S. It forms metasomatically. Very fine striations, parallel to (001), are sometimes observed on the faces of crystals of pentagonal-dodecahedral habit. In addition to the principal faces, rare weakly expressed cube and octahedral faces are present. For the unit cell, $a_0 = 5.403 \text{ kX}$. The octahedral pyrite is characterized by an anomalously light color and contains an appreciable admixture of Co (data from spectral analysis). The faces of the octahedrons have striations in three directions. The tops and edges of the octahedrons commonly are truncated by small faces of (210), (211), (231), (421) and, occasionally, (316) and (452). For the unit cell of this variety, $a_0 = 5.421$. A consideration of the causes which have produced the pyrite crystals leads to the following conclusions:

1) one of the principal factors influencing the crystal form of pyrite is the chemical environment, oxidizing or reducing; and 2) the octahedral form of pyrite may develop because of admixtures of

Card 2/3

15-57-5-6238

"Ferutite" and Davidite (Cont.)

development of the forms (0001) and (12 $\bar{3}$ 0) in the Mozambique crystals. The earlier accepted formula for the Mozambique mineral, $AB_3(O, OH)_7$, is not contradicted by X-ray data. The tetrahedral and octahedral cavities in the hexagonal packing are filled in the ratio of 3:2. The simple hexagonal packing of the Mozambique mineral is composed, along $\sqrt{0001}$, of ten layers of tetrahedrons. From an earlier published analysis of davidite from South Australia, the author derived the formula $K'_x K'_y Ti(1 - x/2 - 3/4 - y/4z)O_2 - z/OH$; where x is 0.26, y is 0.23, and z is 0.08. The formula indicates the similarity in composition of davidite and TiO_2 and furnishes grounds for assuming the davidite structure to be of the rutile, brookite, or anatase type. The debyeogram of davidite (after excluding the weak line 3.04 kX) clearly indicates brookite-type structure with average values of 5.435 for a_0 and 13.37 for c_0 (it is possible that the parameters of the unit cell are smaller than these values). Davidite, consequently, belongs to the tetragonal system (perhaps pseudocubic) and has a dense cubic packing, with almost half the cavities occupied by cations. The name "ferutite" is proposed for the Mozambique mineral to reflect its composition--

Card 3/4

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15-57-5-6238

"Ferutite" and Davidite (Cont.)

Fe, U, Ti.

E. M. K.

Editor's note: The mineral from Mozambique, described by Bannister and Horne, was called "mavudzite" by Vasconcelos in 1954, named for the place of its discovery. The term mavudzite has priority, and the term ferutite is superfluous.

Card 4/4

KAZITSYN, Yu.V.; ALEKSANDROV, G.V.

Arrangement of patterns of crystalline structural nets and the
projection of structures on planes of an arbitrary crystal.
Zap.Vses.min.ob-va 85 no.2:187-201 '56. (MLRA 9:9)

1. Fedorovskiy institut, Leningrad.
(Crystallography)

STULOV, N.N.; SHAFRANOVSKIY, I.I.; MOKIYEVSKIY, V.A.; POPOV, G.M.; ~~DETSKH-~~
TIN, A.G.; NIKOLAYEV, V.A.; ANSHELES, O.M.; GRIGOR'YEV, D.P.;
YEROFEYEV, B.N.; TATARSKIY, V.B.; SOLOV'YEV, S.P.; NIKITIN, V.D.;
RUDENKO, S.A.; DUBININA, V.N.; ALYAVDIN, V.F.; VLADIMIROV, B.N.;
KAZITSYN, Yu.V.; FRANK-KAMENETSKIY, V.A.; KALININ, A.I.; BALA-
SHOVA, M.N.; SAL'DAU, E.P.; DOLIVO-DOBROVOL'SKAYA, G.M.; LAV-
RENT'YEV, M.F.

Viktor Ivanovich Mikhsev, Zap. Vses. min. ob-va 86 no.2:317-320
'57. (MLRA 10:6)

(Mikhsev, Viktor Ivanovich, 1912-1956)

KAZITSYN, Yu.V.

Method of molecular volumes and its application in the study of altered rocks. Zap. Vses. min. ob-va 87 no.2:181-196 '58.

(MIRA 11:9)

1. Daystvital'nyy chlen Vsesoyuznogo mineralogicheskogo obshchestva.
(Metasomatism)

IZOKH, E.P.; KAZITSYN, Yu.V.

Structural discontinuity in the albite-anorthite series and the petrographic importance of plagioclases of various structural types.
Zap.Vses.min.ob-va 88 no.3:247-260 '59. (MIRA 12:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut,
Leningrad.

(Plagioclase)

KAZITSYN, Yu.V.; ALEKSANDROV, G.V.

Metasomatic zoning in the argillization of granite-porphyries in
contact ore bodies. Geol. rud. mestorozh. no.5:91-103 S-0 '59.
(MIRA 13:2)

1. Vsesoyuznyy geologicheskii nauchno-issledovatel'skiy institut,
Leningrad.
(Transbaikalia--Ore deposits)

NEFEDOV, Ye.I.; KAZITSYN, Yu.V.

All-Union conference on mineralogical methods used in prospecting
for rare metal deposits. Zap. Vses. min. ob-va 88 no.5:632-634
'59. (MIRA 13:2)

(Metal, Rare and minor) (Mineralogy)

KAZITSYN, Yu.V.; ALEKSANDROV, G.V.

Concentration of metals in plants growing over molybdenum deposits
in permafrost. Mat. VSEGEI no. 32:127-134 '60. (MIRA 14:3)
(Siberia, Eastern--Ore deposits)
(Geochemical prospecting)

KAZITSYN, Yu.V.

Circumveinal argillization of diorites in a molybdenum ore deposit.
Dokl. AN SSSR 134 no.6:1428-1431 0 '60. (MIRA 13:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut.
Predstavleno akademikom D.S.Korshinskim.
(Transbaikalia--Diorite) (Metasomatism)

KAZITSYN, Yu.V.; ALEKSANDROV, G.V.; PAVLOVA, V.V.; PANOV, Ye.N.

Mesozoic metalliferous intrusions in the Olekma-Nerchugan region.
Sov.geol. 5 no.9:61-77 S '62. (MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut.
(Olekma Valley--Rocks, Igneous)
(Nerchugan Valley--Rocks, Igneous)

KAZITSYN, Yu.V.; ALEKSANDROV, G.V.

Concerning the remarks by G.T. Volostnykh and others on the
article "Metasomatic zoning in the agrillization of granite-
porphyries in contact ore bodies. Geol.rud.mestorozh. no.5:
101-102 S-0 '62. (MIRA 15:12)
(Agrillization) (Granite) (Porphyry)

KAZITSYN, Yu.V.

Intensity of postmagmatic processes. Trudy VSEGEI
73:67-80 '62. (MIRA 15:9)
(Metasomatism)

KAZITSYN, Yu. V.

Mineralogical and geochemical characteristics of the argillization of basic rocks. Zap. Vses. min. ob-va 91 no.4:421-432 '62.
(MIRA 15:10)

(Rocks, Igneous) (Argillization)

KAZITSYN, Yu.V.

Orthoclase metasomatite of northeastern Transbaikalia. Trudy
VSEGEI 96:21-33 '63. (MIRA 17:9)

KAZITSYN, Yu.V.

All-Union conference on the methods of studying and geological significance of accessory minerals. Zap.Vses.min.ob-va 92 no.4:508-511 '63.
(MIRA 17:2)

NAKOVNIK, N.I.; KAZITSYN, Yu.V.

Conference on the metasomatic alterations of wall rocks
and their role in ore formation. Zap. Vses. min. ob-va 92
no.5:626-629 '63. (MIRA 17:1)

KAZITSYN, Yu.V.; UGAROV, V.A.

Petrochemical criteria of the distribution of uranium in the
Mesozoic igneous rocks of northeastern Transbaikalia. Trudy
VSEGEI 95:131-140 '63. (MIRA 17:11)

TIKHOMIROV, N.I.; KOZUBOVA, L.A.; TIKHOMIROV, I.N.; KAZITSYN, Yu.V.;
KHARKEVICH, D.S.; PANOV, Ye.N.; RUDAKOVA, Zh.N.; PAVLOVA,
V.V.; ROZINOV, M.I.; ALEKSANDROV, G.V.; SHATKOV, G.A.;
SOLOV'YEV, N.S.

[Intrusive complexes of Transbaikalia] Intruzivnye komplekсы
Zabaikal'ia. [By] N.I.Tikhomirov i dr. Moskva, Izd-vo
"Nedra," 1964. 214 p. (MIRA 17:7)

UGAROV, V.A.; KAZITSYN, Yu.V.

Universal gamma surveying in regions difficult to reach. Vop.rud.
geofiz. no.4:78-83 '64. (MIRA 18:1)

KASITSYN, Yu.V.

Hypothesis of the nature of metallogenic specialization and
some mineralogeochemical aspects of it. Zap. Vses. min. ob-va
94 no.1:28-40 '65. (MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut
(VSEGEI), Leningrad.

KAZITSYN, Yu.V.

Svanbergitization as a new type of wall rock alteration of
granitoids. Dokl. AN SSSR 161 no.2:440-443 Mr '65.

(MIRA 18:4)

1. Submitted November 9, 1964.

KAZITSYNA, L. A.

"Furane Sulfonation," Dokl. AN SSSR, 51, No.8, 1946

Moscow State U.

COMMON ELEMENTS		PROCESSING AND PROPERTIES INDEX		SPECIAL INDEX	
<p>CA</p> <p>Sulfonation of furan and its homologs. L. A. Kazitsyna. <i>Vestnik Moskov. Univ.</i> 1947, No. 3, 109-11.—Dissertation summary. Pyridine-SO₃ was used for the sulfonations at 100° for 6-10 hrs. The sulfonates were isolated as Ba salts by treatment of the reaction mixt. with BaCO₃ paste with warming on a water bath. The amt. of the sulfonating agent affected not only the yields but the nature of the products. Generally, 70-90% yields were</p>		<p>obtained. Furan gave a sulfonate, whose Na and Ba salts were isolated and which was shown to be the 2-sulfonate by oxidation with Br water (elimination of BaSO₃ and maleic acid). 2-Methylfuran gave 2-methyl-5-sulfofuran under similar treatment at 80-90° in (CH₃Cl); when the same method was used as that for furan, a disulfonate formed, one SO₃H being in the 5-position, the other apparently ortho to Me. 2,5-Dimethylfuran also readily gave a sulfonate, which was shown to be the 3-compd. by Br water oxidation (no BaSO₃ ppt.). Coumarone similarly gave the 2-sulfo deriv., isolated as the Ba and Na salts. Heating thiophene with the reagent 8-10 hrs. at 100° gave 2,4-disulfothiophene. Anisole is quantitatively sulfonated by this reagent, while C₆H₅ and homologs do not react. The furan-type sulfonates are stable to alkali and are readily hydrolyzed by heating with acids, losing SO₃ and yielding the corresponding OH deriv. The only exception is coumarone, which loses H₂SO₄ and reverts to coumarone. Thiophenesulfonate also behaves similarly, yielding thiophene on acid hydrolysis. Qual. tests showed that pyridine-SO₃ converts olefins and diolefins to sulfo deriva.</p> <p>G. M. Kosolapoff</p>		<p>10</p>	
<p>ASB-11A METALLURGICAL LITERATURE CLASSIFICATION</p>					
<p>SEARCHED INDEXED</p>					
<p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p>					

COMMON ELEMENTS		PROCESSING AND PROPERTIES INDEX	
CA		16	
<p>Sulfonation of furan derivatives. A. P. Terent'ev and L. A. Kazitsyna (Lomonosov State Univ., Moscow). <i>Compt. rend. acad. sci. U.R.S.S.</i> 55, 625 (1957). Cf. C.A. 41, 2833a. Silvan (I), 2,5-dimethylfuran (II), coumarone (III), and thiophene (IV) were sulfonated with $\text{C}_6\text{H}_5\text{N-SO}_3$ in 1:3 molar ratio at 100 ± 8 to 100 ± 10 hrs. in a sealed tube. I gave 80% 2-methyl-3,5-furandisulfonic acid (V), isolated as the Ba and Na salts. Pure V was not obtained since it is very hygroscopic. II gave 2,5-dimethyl-3-furandisulfonic acid as the Ba salt. III gave in quant. yield 2-coumaronesulfonic acid, isolated as the Ba and Ag salts. IV gave a disulfonic acid, the constitution of which has not yet been established. C_6H_5, MePh, and 1,3,5-Me₃C₆H₃ were not sulfonated by $\text{C}_6\text{H}_5\text{N-SO}_3$, whereas PhOMe gave a quant. yield of a monosulfonic acid. W. S. Port</p>			
MATERIALS INDEX		62-75-2277	
<p>ASB-51A METALLURGICAL LITERATURE CLASSIFICATION</p>			
SANDS		SILICON	
SANDS		SILICON	

CA

Sulfonation and sulfonic acids of acidophobic substances. X. Sulfonation of 2-acetylfuran. A. P. Terent'ev, L. A. Kazitsyna, and A. M. Turovskaya (Moscow State Univ.). *Vestnik Mosk. Univ.* 3, 150-60(1980).

Zhur. Obshch. Khim. (J. Gen. Chem.) 20, 1857, 1950; cf. C.A. 44, 3073c. 2-Acetylfuran (2 g.) and 5.8 g. pyridine- SO_3 in 10 ml. (CHCl_3) after 10 hrs. at 140° , followed by treatment with BaCO_3 , gave 0.8 g. unreacted acetylfuran and 2.5 g. (82.5%) of 2-acetyl-4-sulfonate (from dil. EtOH), which yields BaSO_4 in the cold with Br water. The use of more sulfonating agent gave lower yields. Attempted sulfonation with H_2SO_4 and SO_3 in CHCl_3 gave only tars and no sulfonic acids. G. M. Knodt-poll

KAZITSYNA, L. A.

Terent'yev, A. P., Kazitsyna, L. A. and Turovskaya, A. M. "The sulfonation of -acetylfuran", Vestnik Mosk. un-ta, 1948, No. 10, p. 159-60.

SC: U-3042, 11 March 53, (Ietopis 'nykh Statey, No. 10, 1948).

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Sulfonation and sulfonic acids of acidophobic compounds. I. Sulfonation of furan. A. P. Terent'ev and A. A. Kazitayna. *Zhur. Obshchei Khim.* (J. Gen. Chem.) 18, 723-8 (1948); cf. C.A. 42, 559c — Pyridine- SO_3 was found to be the most suitable sulfonating agent for furan. The reagent, prepd. according to Baumgarten (C.A. 19, 817; 20, 3009), m. 175° (decomp.). Tech. furan was purified through the maleic anhydride adduct, which was decompd. at 140-50°; pure furan, b. 31.2-1.5°, n_D^{20} 1.4234, d_4^{20} 0.9392. Synthetic furan, prepd. in 94% yield by decarboxylation of pyromucic acid by heating with Ph_3NH , b. 31.4-2°, n_D^{20} 1.4236, d_4^{20} 0.9390. The sulfonations were conducted by heating to 100° 8-10 hrs. in sealed tubes, treating the mixt. with an aq. paste of Na_2CO_3 on the steam bath 30-40 min., filtering hot, evap., and pptg. *Na furansulfonate* with EtOH . In typical expts. 1.9 g. furan gave a 30% yield when 4.4 g. pyridine- SO_3 was used, 56% with 8.8 g., and 90% with 13.4 g. The *Na* salt was purified by pptn. from H_2O by EtOH ; with Na_2CO_3 it gave the *Na* salt, purified as above. The *Na* salt gives with *S*-benzylthiuronium chloride a difficultly sol. salt, decomp. 205°. The *Na* sulfonate (1 g.) treated with the theoretical amt. of H_2SO_4 and filtered, gave on evapn. the *free furansulfonic acid* as an oily liquid, which deposits crystals rapidly deliquescent in air. Oxidation of the *Na* salt with Br water gave *Na* maleate dihydrate and BaSO_4 , thus indicating that sulfonation proceeds in the α -position. The furansulfonic acid is stable to hot alkalis but is decompd. by boiling 20-5% HCl or H_2SO_4 , yielding *S* oxide and the corresponding *HO* deriv. G. M. K.

Sulfonation and Sulfonates of Heterocyclic Com-

1. *3,4-Dichlorobenzonitrile* (1.0 g, 4.5 mmole) in 10 ml. CHCl_3 and 10 ml. H_2O is a colorless, acidic solution. Immediately gives BaSO_4 and the solid yields $\text{AcO} \cdot \text{CHCl}_2$ (1.22), hence the monosulfonate and not the disulfonate. Heating the Ba salt of either the mono- or disulfonate acids with 25% HCl yields SO_2 . The Mg salt (1.0 g) and 4.5 g. NaH , H_2O gave the hydrocarbon, which with KOH yielded 4.5 g. 2,3-dimethoxy-4,5-dichlorobenzonitrile, mp 141-142, d_4^{20} 1.4133. Sulfonation of 1.0 g. pyridine- SO_3 10 hrs. at 150° gave the sulfonate salt. The Ba salt (from water) and the Na salt (from 25% HCl) the location of SO_3H is shown by lack of change in H_2O even on heating; heating the Ba salt with 25% HCl 8 hrs. gives detectable amounts of SO_2 . The Na salt (1.0 g) and 5 g. pyridine- SO_3 in 10 ml. H_2O gave a solution of the Na salt. Crystals from 25% HCl convert to a crystal. No salt treatment with H_2O gives BaSO_4 and the solid yields the Na salt. mp 147-148. *3,4-Dichlorobenzonitrile* heating with 25% HCl gave

2. *3,4-Dichlorobenzonitrile* (1.0 g, 4.5 mmole) in 10 ml. CHCl_3 and 10 ml. H_2O is a colorless, acidic solution. Immediately gives BaSO_4 and the solid yields $\text{AcO} \cdot \text{CHCl}_2$ (1.22), hence the monosulfonate and not the disulfonate. Heating the Ba salt of either the mono- or disulfonate acids with 25% HCl yields SO_2 . The Mg salt (1.0 g) and 4.5 g. NaH , H_2O gave the hydrocarbon, which with KOH yielded 4.5 g. 2,3-dimethoxy-4,5-dichlorobenzonitrile, mp 141-142, d_4^{20} 1.4133. Sulfonation of 1.0 g. pyridine- SO_3 10 hrs. at 150° gave the sulfonate salt. The Ba salt (from water) and the Na salt (from 25% HCl) the location of SO_3H is shown by lack of change in H_2O even on heating; heating the Ba salt with 25% HCl 8 hrs. gives detectable amounts of SO_2 . The Na salt (1.0 g) and 5 g. pyridine- SO_3 in 10 ml. H_2O gave a solution of the Na salt. Crystals from 25% HCl convert to a crystal. No salt treatment with H_2O gives BaSO_4 and the solid yields the Na salt. mp 147-148. *3,4-Dichlorobenzonitrile* heating with 25% HCl gave

$\text{C}_6\text{H}_5\text{SO}_2\text{Cl}$, 8 hrs. at 100° gave 25% 2,4'-disulfone anal.
 product is the di-Ba salt, crystals (from water) $\text{mp } 110^\circ$
 (decolor). Similarly gave 45% Ba 1-s-tolyl-2-pyridesulfonate,
 crystals, poorly sol. in water. All of the products
 good stable with bromine water. G. M. Kosman

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Sulfonation and sulfonic acids of acidophobic compounds. VIII. The investigation of sulfonation agents. A. P. Terent'ev, L. A. Kazitsyna, and S. E. Suvorova (Moscow State Univ.). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 19, 1951-4(1949); cf. C.A. 43, 214r; 44, 1481r. H_2SO_4 yields only tars with furan deriva. regardless of the solvents used; reaction with sylvan is similar. In the presence of Me_3NPh or pyridine with 1 mole H_2SO_4 , no reaction takes place even at 120° , while higher proportions of H_2SO_4 give tar. SO_3 gave tars and only traces of sulfonic acids with furan or sylvan even in Ac_2O soln.; sulfonation by pyridine- SO_3 succeeds only when equimolar amts. of reagents are used, as excess of pyridine hinders the reaction; traces of SO_3 act similarly. $Me_3N.SO_3$ (obtained by direct interaction) gives up its SO_3 sluggishly and yields but 15% furansulfonic acid in 20 hrs. at 100° . Treatment of furan with dioxane- SO_3 gave tars and S-contg. acids of products of ring opening of furan and dioxane. Picoline- SO_3 behaves analogously to the previously described pyridine analog for sulfonation reactions. G. M. K.

KAZITSYNA, L. A.

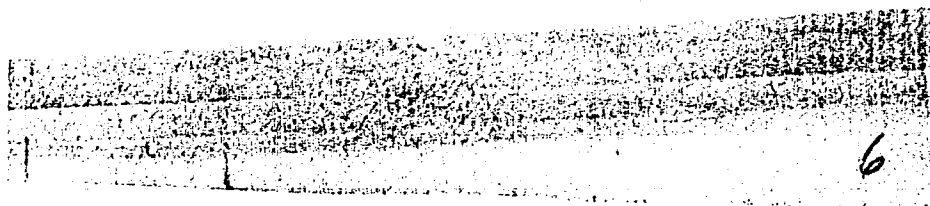
Terent'ev, A. P., Kazitsyna, L. A., & Turovskaya, A. M. - "Sulphonation and sulphonic acids of acidophobic compounds. X. Sulphonation of -acetyl furan." (p. 185)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1950, Vol. 20, No. 1

KAZITSYNA, L.A.

Sulfonation of furan and its homologs. Uchenye Zapiski Moskov. Gosudarst.
Univ. im. M.V. Lomonosova No.131, 5-36 '50. (MIRA 4:3)
(CA 47 no.20:10518 '53)

KAZITSYNA, L. A.



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~~11~~ ✓ Absorption spectra of pyrylium salts. A. N. Meyanov, L. A. Kazitsyna, N. K. Kochetkov, and M. N. Rybinskaya. ~~U.S.S.R., Div. Chem. Sci.~~ 1954, 075-83 (Engl. translation).—See C.A. 49, 4464h.
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✓ Absorption spectra of pyrylium salts. A. N. Nemeyanov, L. A. Karitsyna, N. K. Zochetkov, and M. I. Rybinakaya (M. V. Lomonosov State Univ., Moscow). *Izvest. Akad. Nauk S S S R. Otdel. Khim. Nauk* 1954, 784-85. — The following absorption spectra were obtained from various pyrylium salts: 2-methylbenzopyrylium ferrichloride, red, m. 125-5.3°, abs. max. 545, 500, and 324 mμ; 2,6-dimethylbenzopyrylium ferrichloride, violet, m. 103-5°, abs. max. 548, 508, and 332 mμ; 6-hydroxy-2-methylbenzopyrylium ferrichloride, violet, m. 123-3°, abs. max. 500, 516, and 337 mμ; 7-hydroxy-2-methylbenzopyrylium ferrichloride, violet, m. 145°, abs. max. 570, 528, and 380 mμ; flavilium ferrichloride, yellow, m. 137-8°, abs. max. 393 mμ; 6-methylflavilium ferrichloride, green-yellow, m. 170-1.5°, abs. max. 400 mμ; 4',6-dimethylflavilium ferrichloride, yellow, m. 199-200°, abs. max. 412 mμ; 4'-bromo-6-methylflavilium ferrichloride, yellow, m. 183°, abs. max. 410 mμ; 6-hydroxyflavilium ferrichloride, brown, m. 158-9°, abs. max. 434 and 357 mμ; 4'-bromo-6-hydroxyflavilium ferrichloride, red-brown, m. 100-1.5°, abs. max. 420 and 393 mμ; 7-hydroxyflavilium ferrichloride, brown, m. 158-0°, abs. max. 423 and 385 mμ; 4'-bromo-7-hydroxyflavilium ferrichloride, orange, m. 169°, abs. max. 444, 396, and 312 mμ; 7-hydroxy-4-methoxyflavilium ferrichloride, orange, m. 173-7°, abs. max. 452, 415, and 319 mμ.

G. M. Kuznetsov

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TRIKHOT'KO, N. F.

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Study of the structure of chelates by their infrared and
ultraviolet spectra. M. I. Pasternak, A. P. Terent'ev (M. V. Lomonosov Moscow State Univ.),
Zh. Neorg. Khim. 1964, 9, 14, 24. (Chem. Abstr. 60:14, 24)
by Pfeider's method. The infrared spectra of the
complexes of Cu, Ni, Pd, Pt, and Ag with the
ligand were studied. The complexes were
found to be tetrahedral. The infrared spectra
of the complexes of Cu, Ni, Pd, Pt, and Ag
with the ligand showed peaks at 275 and 145 cm⁻¹.
The complexes of Cu, Ni, Pd, Pt, and Ag with the
ligand showed peaks at 275 and 145 cm⁻¹.
(Calvin *et al.*, C.A. 41, 6586) indicate that it has a tetrahedral
structure. Ni and Cu salicylaldehyde methyl- and butylamines
and hexamethylenediamine exhibited an addnl. peak at
300 mμ. These are trans complex. The infrared spectra of
I passed through 1 peak at 3300 cm⁻¹ confirming the trans
structure. X-ray studies of the Ni chelate indicate a trans
structure. The spectra of the Zn and Cu chelates were
similar to each other and are probably tetrahedral com-
plexes.

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